

ABSTRACT

A liquid crystal display having an increased pixel aperture ratio is disclosed along with a method of making same. An array of a-Si TFTs is deposited on a transparent substrate. Subsequently, an organic insulating layer (e.g. Benzocyclobutene) and a corresponding array of pixel electrodes are deposited over the TFT array so that the pixel electrodes overlap the display address lines thereby increasing the display's pixel aperture ratio. The low dielectric constant ϵ (e.g. about 2.7) and relatively high thickness (e.g. greater than about 1.5 μm) of the insulating layer reduce the pixel electrode-address line parasitic capacitance C_{pl} in the overlap areas thereby reducing cross-talk (or capacitive coupling) in the display. In sum, an increased pixel aperture ratio is achieved without sacrificing display performance.